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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,441	02/10/2004	Jose P. Pereira	NLMI.P149	3702
30554	7590	06/27/2006		
SHEMWELL MAHAMEDI LLP 4880 STEVENS CREEK BOULEVARD SUITE 201 SAN JOSE, CA 95129			EXAMINER PEERS, CHASE W	
			ART UNIT 2186	PAPER NUMBER

DATE MAILED: 06/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/776,441	<b>Applicant(s)</b> PEREIRA ET AL.	
	<b>Examiner</b> Chase Peers	<b>Art Unit</b> 2186	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 June 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 30-34 is/are allowed.
- 6) ☒ Claim(s) 1-5, 9, 10, 13, 14, 18, 20-28, 35, 36, 40, 46, 47, 49, 50 is/are rejected.
- 7) ☒ Claim(s) 6-8, 11, 12, 15-17, 19, 29, 37-39, 41-45 and 48 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 18, 20, and 26 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. These claims make mention of a priority storage array or CAM disposition; neither of which has been located in the specification by the examiner.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 18, 20, 26, and 27 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 18 and 20, priority storage array is indefinite and, to the examiners knowledge, has no referent.

Regarding claim 26, the examiner is unsure of the meaning of a configuration instruction that includes information that indicates the disposition of

a CAM. As noted above, no reference to disposition of a CAM was found in the specification.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 21, 22, 25, and 28 rejected under 35 U.S.C. 102(b) as being anticipated by Huse et al. (Pat No 6521994).

Huse et al. describes a CAM core to output a local priority, a CAM comprising a configuration circuit coupled to cascade logic to provide a control value, the core configured to store configuration information within the configuration circuit in response to a configuration instruction from a host device, the configuration information being a value including one or more bits that correspond to a control value (column 1, lines 12-30), cascade logic coupled to the core to receive local priority number, having an input to receive one or more remote priority numbers from another CAM (column 8, lines 21-42, and column 11, lines 13-48), an interface to receive a control value (figure 8), the CAM core comprising an instruction decoder being coupled to the configuration circuit (figure 7a) and cascade logic configured to compare priority according to a control value (column 11, lines 13-48, column 12, lines 26-45).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-5, 9, 10, 13, 14, 23, 35, 36, 40, 46, 47, 49, and 50 rejected under 35 U.S.C. 103(a) as being unpatentable over Khanna et al. (Pat No 6539455) and further in view of Huey et al. (Pat No 5467349) and Huse et al. (Pat No 6521994).

Regarding claims 1, 3, 9, and 10, Khanna et al. describes a first CAM with a priority output, a second and third CAM with a priority input and enable output coupled to priority output, a second CAM with a priority output, the first CAM to output a first priority, the second CAM to receive a first priority, the second CAM to output highest priority of the two, a third CAM to receive winning priority and to output an enable signal to the second CAM if the winning priority is higher than the third priority, and the output bus coupled to each CAM (column 4, lines 15-19, column 21, fig 13).

Khanna et al. does not expressly disclose an enable inputs coupled between the CAMs to conduct first enable signal.

Huey et al. does disclose an enable inputs coupled between the CAMs to conduct first enable signal (column 10, lines 7-20).

Khanna et al., Huey et al. and Huse et al. are analogous art because they are from the same field of endeavor, CAM systems. At the time of the invention it would have been obvious to a person of ordinary skill in the art to have enable inputs coupled between CAMs to conduct a first enable signal. The suggestion for doing so would have been reduced footprint. Therefore, it would have been obvious to combine Khanna et al., Huey et al. and Huse et al. for the benefit of size to obtain the invention as specified in claims 1, 3, 9 and 10.

Regarding claims 4, 5, 40, and 50, Khanna et al. and Huey et al. describe all the limitations of claim 1. Khanna et al. also describes a CAM outputting a first priority from the first CAM, outputting a first enable signal from the third CAM to the second CAM if the first or second priority is higher than the third, outputting the enable to another CAM if the remote priority is higher than the local (column 4, lines 15-19, column 21, fig 13), and generating local priority and match addresses (column 5 line 64 to column 6, line 8 and column 8, lines 6-20).

Huse et al. describes a CAM core to output a local match address and local priority value in response to a compare, cascade logic coupled to receive a priority value from the CAM core and a remote priority value from the priority number of the third CAM, cascade logic configured to output an enable signal from an enable output of the third CAM if a remote priority has higher priority, enable a local match address to output bus if the local priority is higher, cascade logic coupled to receive a priority value from the CAM core and a remote priority value from the priority number input of the second CAM, cascade logic

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configured to output an enable signal from the enable output of the second CAM if the remote priority has higher priority, an enable local match address to output bus if the local priority is higher and an enable signal is received from the enable input of the second CAM (column 11, lines 13-48, column 12, lines 26-45), and outputting a match address to the bus if local priority is higher than the remote priority and the enable signal is received from the second other CAM (column 1, lines 12-30).

Khanna et al., Huey et al. and Huse et al. are analogous art because they are from the same field of endeavor, CAM systems. At the time of the invention it would have been obvious to a person of ordinary skill in the art to output the match and enable signals. The suggestion for doing so would have been to choose which CAM to take data from. Therefore, it would have been obvious to combine Khanna et al., Huey et al. and Huse et al. for the benefit of using a cascading CAM to obtain the invention as specified in claims 4, 5, 40, and 50.

Regarding claims 13, 14, 35, 36, 46, 47, and 49, Khanna et al. and Huey et al. describe all the limitations of claims 9 and 10 and Khanna et al. also describes the first CAM including a first (as well as a second and third) CAM core to generate a first, second or third match address that corresponds to a first, second or third priority, the first CAM generating a local priority value, outputting numerically the lowest one of the first and second priorities (column 2 lines 6-27), and generating a match address within the second or third CAM (column 5 line 64 to column 6, line 8 and column 8, lines 6-20).

Huse et al. describes a third CAM configured to output a third match address onto the output bus if the third CAM outputs a first enable signal and the second priority contains the winning value, outputting a match address from the first CAM if the local priority is higher and an enable received from a third CAM (column 1, lines 12-30), comparing local priority with a remote priority received from the second CAM, outputting a match address onto the output bus that is coupled to the CAMs, outputting a match address onto the output bus that is coupled to the CAMs if the first enable is output from the third to second CAM and the second priority is higher than the first, outputting a match address onto the output bus that is coupled to the CAMs if the third priority is higher than the first and second priorities (column 11, lines 13-48, column 12, lines 26-45)

Khanna et al., Huey et al. and Huse et al. are analogous art because they are from the same field of endeavor, CAM systems. At the time of the invention it would have been obvious to a person of ordinary skill in the art to add what was described in Huse et al. The suggestion for doing so would have been to have a smaller footprint. Therefore, it would have been obvious to combine Khanna et al., Huey et al. and Huse et al. for the benefit of size to obtain the invention as specified in claims 13, 14, 35, 36, 46, 47, and 49.

Regarding claim 23, Huse et al. describes all the limitations of claims 21 and 22, but does not describe the configuration circuit comprising a programmable non-volatile storage to store the configuration value or the



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configuration value including one or more bits that correspond to the control value.

Khanna et al. describes the configuration circuit comprising a programmable non-volatile storage to store the configuration value (column 9, lines 1-17).

Huey et al. describes the configuration value including one or more bits that correspond to the control value (column 9, lines 12-42).

Khanna et al., Huey et al. and Huse et al. are analogous art because they are from the same field of endeavor, CAM systems. At the time of the invention it would have been obvious to a person of ordinary skill in the art to store the configuration value in non-volatile memory. The suggestion for doing so would have been easier recovery. Therefore, it would have been obvious to combine Khanna et al., Huey et al. and Huse et al. for the benefit of recovery to obtain the invention as specified in claim 23.

Claim 24 rejected under 35 U.S.C. 103(a) as being unpatentable over Khanna et al., Huey et al., and Huse et al. as applied to claims 21 and 22 above, and further in view of Pereira (Pat No 6324087).

Khanna et al., Huey et al. and Huse et al. describe all the limitations given in claims 21 and 22 but do not describe the configuration circuit being one time programmable.

Pereira does describe the configuration circuit being one time programmable (column 6, lines 7-21).

Khanna et al., Huey et al., Huse et al. and Pereira are analogous art because they are from the same field of endeavor, CAM systems. At the time of the invention it would have been obvious to a person of ordinary skill in the art to have the configuration circuit be one time programmable. The suggestion for doing so would have been so that it could be customized. Therefore, it would have been obvious to combine Khanna et al., Huey et al., Huse et al. and Pereira for the benefit of customization to obtain the invention as specified in claim 24.

#### ***Allowable Subject Matter***

Claims 30-34 allowed. The examiner could find no good art regarding the output of a second enable signal from a second other CAM if the remote priority was higher.

#### ***Claim Objections***

Claims 6-8, 11, 12, 15-17, 19, 29, 37-39, 41-45, and 48 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chase Peers whose telephone number is (571) 272-6757. The examiner can normally be reached on from Monday to Friday, 8AM to 4:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on (571) 272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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SUPERVISORY PATENT EXAMINER  
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